Amendments to the Claims

Please amend claims 1, 2, 10, 11 & 19-21 as set forth below. All pending claims are reproduced below, with changes in the amended claims shown by underlining (for added matter) and strikethrough/double brackets (for deleted matter).

1. (Currently Amended) A method for generating routes for routing data packets in a network of interconnected nodes, the nodes being at least partially interconnected by links, the method comprising:

generating static path, source-based routes for routing data packets in the network of interconnected nodes, the generating of static path, source-based routes comprising:

(i) selecting a source node - destination node (S-D) group with common starting and ending sets of links from the network of interconnected nodes;

(ii) selecting shortest static path, source-based routes between at least some S-D nodes of the S-D group so that:

(a) selected static path, source-based routes substantially uniformly fan out from the source nodes to a center of the network and fan in from the center of the network to the destination nodes; [[and]]

(b) local balance of static path, source-based routes between selected S-D nodes of the S-D group passing through links that are at the same level of the network is achieved; and

[[(b)]] (c) global balance of static path, source-based routes passing through links that are at the same level of the network is achieved.

2. (Currently Amended) The method of claim 1, further comprising repeating said selecting (i) of the S-D group for a plurality of S-D groups from the network, and for each S-D group, selecting (ii) the shortest routes between S-D nodes of the group so that (a) & (b) & (c) are met, wherein links within the network that are at a same level of the network have a substantially balanced number of routes passing therethrough and are locally balanced.

3. (Original) The method of claim 1, wherein said selecting (ii) comprises exploring the network from a source node until a destination node is reached, and for each S-D pair of the group, prioritizing output ports at each stage based on least global weight of links on a node switch board (NSB), and by rank ordering output ports based on next level usage before prioritizing based on global weight of links on an intermediate switch board (ISB).

4. (Original) The method of claim 3, wherein said selecting (ii) further comprises building the shortest routes between S-D nodes of the S-D group employing said prioritizing and said rank ordering.

5. (Original) The method of claim 3, wherein said rank ordering comprises rank ordering output ports of the ISB such that ports with less traffic have a higher rank, and if more than one output port has a same rank, reordering the ranking so that an output port with a lower global weight on its link receives higher priority.

6. (Original) The method of claim 1, further comprising repeating said selecting (i) of the S-D group for each S-D group of the network, and wherein said selecting (ii) comprises substantially equalizing load on links within the network at a same level of the network considering the selected routes passing through said links by the multiple S-D groups.

7. (Original) The method of claim 1, wherein said selecting (ii) comprises selecting the shortest routes without prior knowledge of the type of data packages to be forwarded across said routes.

8. (Original) The method of claim 1, wherein said selecting (i) further comprises selecting an S-D group with at least one cross connection within an intermediate switch board (ISB) disposed between the common starting and ending sets of links of the network of interconnected nodes.

9. (Original) The method of claim 8, wherein said selecting (ii) comprises selecting said shortest routes by employing cross connected links within the ISB that are disjoint.

10. (Currently Amended) A system for generating routes for routing data packets in a network of interconnected nodes, the nodes being at least partially interconnected by links, the system comprising:

means for generating static path, source-based routes for routing data packets in the network of interconnected nodes, the generating of static path, source-based routes comprising:

(i) means for selecting a source node - destination node (S-D) group with common starting and ending sets of links from the network of interconnected nodes;

(ii) means for selecting shortest static path, source-based routes between at least some S-D nodes of the S-D group so that:

(a) selected static path, source-based routes substantially uniformly fan out from the source nodes to a center of the network and fan in from the center of the network to the destination nodes; [[and]]

(b) local balance of static path, source-based routes between selected S-D nodes of the S-D group passing through links that are at the same level of the network is achieved; and

[[(b)]] (c) global balance of static path, source-based routes passing through links that are at a same level of the network is achieved.

11. (Currently Amended) The system of claim 10, further comprising means for repeating said means for selecting (i) of the S-D group for a plurality of S-D groups from the network, and for each S-D group, means for selecting (ii) the shortest routes between S-D nodes of the group so that (a) & (b) & (c) are met, wherein links within the network that are at a same level of the network have a substantially balanced number of routes passing therethrough and are locally balanced.

12. (Original) The system of claim 10, wherein said means for selecting (ii) comprises means for exploring the network from a source node until a destination node is reached, and for each S-D pair of the group, means for prioritizing output ports at each stage based on least global weight of links on a node switch board (NSB), and by rank ordering output ports based on next level usage before prioritizing based on global weight of links on an intermediate switch board (ISB).

13. (Original) The system of claim 12, wherein said means for selecting (ii) further comprises means for building the shortest routes between S-D nodes of the S-D group employing said prioritizing and said rank ordering.

14. (Original) The system of claim 12, wherein said rank ordering comprises means for rank ordering output ports of the ISB such that ports with less traffic have a higher rank, and if more than one output port has a same rank, means for reordering the ranking so that an output port with a lower global weight on its link receives higher priority.

15. (Original) The system of claim 10, further comprising means for repeating said means for selecting (i) of the S-D group for each S-D group of the network, and wherein said means for selecting (ii) comprises means for substantially equalizing load on links within the network at a same level of the network considering the selected routes passing through said links by the multiple S-D groups.

16. (Original) The system of claim 10, wherein said means for selecting (ii) comprises means for selecting the shortest routes without prior knowledge of the type of data packages to be forwarded across said routes.

17. (Original) The system of claim 10, wherein said means for selecting (i) further comprises means for selecting an S-D group with at least one cross connection within an intermediate switch board (ISB) disposed between the common starting and ending sets of links of the network of interconnected nodes.

18. (Original) The system of claim 17, wherein said means for selecting (ii) comprises means for selecting said shortest routes by employing cross connected links within the ISB that are disjoint.

19. (Currently Amended) A system for generating routes for routing data packets in a network of interconnected nodes, the nodes being at least partially interconnected by links, the system comprising:

at least one computing unit adapted to generate static path, source-based routes for routing data packets in the network of interconnected nodes, the generating of static path, source-based routes comprising:

(i) said at least one computing unit being further adapted to select a source node - destination node (S-D) group with common starting and ending sets of links from the network of interconnected nodes;

(ii) said at least one computing unit being further adapted to select shortest static path, source-based routes between at least some S-D nodes of the S-D group so that:

(a) selected static path, source-based routes substantially fan out from the source nodes to a center of the network and fan in from the center of the network to the destination nodes; [[and]]

(b) local balance of static path, source-based routes between selected S-D nodes of the S-D group passing through links that are at the same level of the network is achieved; and

[[(b)]] (c) global balance of static path, source-based routes passing through links that are at a same level of the network is achieved.

20. (Currently Amended) At least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method of generating routes for routing data packets in a network of interconnected nodes, the nodes being at least partially interconnected by links, the method comprising:

generating static path, source-based routes for routing data packets in the network of interconnected nodes, the generating of static path, source-based routes comprising:

(i) selecting a source node - destination node (S-D) group with common starting and ending sets of links from the network of interconnected nodes;

(ii) selecting shortest static path, source-based routes between at least some S-D nodes of the S-D group so that:

(a) selected static path, source-based routes substantially uniformly fan out from the source nodes to a center of the network and fan in from the center of the network to the destination nodes; [[and]]

(b) local balance of static path, source-based routes between selected S-D nodes of the S-D group passing through links that are at the same level of the network is achieved; and

[[(b)]] (c) global balance of static path, source-based routes passing through links that are at the same level of the network is achieved.

21. (Currently Amended) The at least one program storage device of claim 20, further comprising repeating said selecting (i) of the S-D group for a plurality of S-D groups from the network, and for each S-D group, selecting (ii) the shortest routes between S-D nodes of the group so that (a) & (b) & (c) are met, wherein links within the network that are at a same level of the network have a substantially balanced number of routes passing therethrough and are locally balanced.

22. (Original) The at least one program storage device of claim 20, wherein said selecting (ii) comprises exploring the network from a source node until a destination node is reached, and for each S-D pair of the group, prioritizing output ports at each stage based on least global weight of links on a node switch board (NSB), and by rank ordering output ports based on next level usage before prioritizing based on global weight of links on an intermediate switch board (ISB).

23. (Original) The at least one program storage device of claim 22, wherein said selecting (ii) further comprises building the shortest routes between S-D nodes of the S-D group employing said prioritizing and said rank ordering.

24. (Original) The at least one program storage device of claim 22, wherein said rank ordering comprises rank ordering output ports of the ISB such that ports with less traffic have a higher rank, and if more than one output port has a same rank, reordering the ranking so that an output port with a lower global weight on its link receives higher priority.

25. (Original) The at least one program storage device of claim 20, further comprising repeating said selecting (i) of the S-D group for each S-D group of the network, and wherein said selecting (ii) comprises substantially equalizing load on links within the network at a same level of the network considering the selected routes passing through said links by the multiple S-D groups.

26. (Original) The at least one program storage device of claim 20, wherein said selecting (ii) comprises selecting the shortest routes without prior knowledge of the type of data packages to be forwarded across said routes.

27. (Original) The at least one program storage device of claim 20, wherein said selecting (i) further comprises selecting an S-D group with at least one cross connection within an intermediate switch board (ISB) disposed between the common starting and ending sets of links of the network of interconnected nodes.

28. (Original) The at least one program storage device of claim 27, wherein said selecting (ii) comprises selecting said shortest routes by employing cross connected links within the ISB that are disjoint.

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